



PART 70

PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

Operating Permit Number:

Expiration Date:

Installation ID: 095-0273

Project Number: 2006-08-029

Installation Name and Address

Rumble I and II Recycling and Disposal Facility
2013 N. Courtney Road
Sugar Creek, MO 64054
Jackson County

Parent Company's Name and Address

Waste Management of Missouri, Inc.
720 E. Butterfield Road
Lombard, IL 60148

Installation Description:

This installation is a closed municipal solid waste disposal facility consisting of two separate landfill areas, each about 45 acres in area. Rumble 1 opened in 1967 and has a capacity of 1.5 million m³. Rumble 2 opened in 1983 and has a capacity of 2.16 million m³. There was a capacity expansion after May 30, 1991. The landfills are controlled by an active gas collection system installed in 1998. (See Construction Permit 1298-011.). Most of the gas is piped to an adjacent property for use in a cement manufacturing process. In cold weather, some of the gas is used by a 1.1 MMBtu landfill gas boiler to heat a greenhouse. When the cement manufacturing processes closes down for maintenance, the gas is sent to a 10-inch candlestick flare.

Effective Date

Director or Designee
Department of Natural Resources

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

This installation is a closed municipal solid waste disposal facility consisting of two separate landfill areas, each about 45 acres in area. Rumble 1 opened in 1967 and has a capacity of 1.5 million m³. Rumble 2 opened in 1983 and has a capacity of 2.16 million m³. There was a capacity expansion after May 30, 1991. The landfills are controlled by an active gas collection system installed in 1998. (See Construction Permit 1298-011.). Most of the gas is piped to an adjacent property for use in a cement manufacturing process. In cold weather, some of the gas is used by a 1.1 MMBtu landfill gas boiler to heat a greenhouse. When the cement manufacturing processes closes down for maintenance, the gas goes to a 10-inch candlestick flare.

Reported Air Pollutant Emissions, tons per year							
Year	Particulate Matter ≤ Ten Microns (PM-10)	Sulfur Oxides (SO _x)	Nitrogen Oxides (NO _x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Lead (Pb)	Hazardous Air Pollutants (HAPs)
2005	1.04	0.86	2.45	1.58	45.48	-	0.62
2004	1.05	0.85	2.68	1.75	45.90	-	0.69
2003	1.16	0.93	2.93	1.93	50.37	-	0.76
2002	0.36	5.69	17.96	7.05	22.58	-	0.33
2001	0.35	5.65	17.52	7.06	22.09	-	0.34

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and which is identified as having unit-specific emission limitations.

Emission Unit #	Description of Emission Unit
EU0010	Rumble I and II Solid Waste Landfills With Gas Collection System and Open Flare
EU0020	Landfill Gas Fired Boiler for heating greenhouse, a Dietrich Model GT408A rated at 1.1 MMBtu/hr, and installed in December 2003 to replace the boiler installed in 1998

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment which does not have unit specific limitations at the time of permit issuance.

Description of Emission Source

Fugitive emissions related to repairs made to the final cover
15,000-gallon Highland leachate storage tank

DOCUMENTS INCORPORATED BY REFERENCE

This document has been incorporated by reference into this permit:
Construction Permit 1298-011

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

None.

Draft

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

EU0010 – SOLID WASTE LANDFILL WITH GAS COLLECTION SYSTEM AND OPEN FLARE	
Emission Unit	Description
EU0010	Solid Waste Landfill With Gas Collection System and Open Flare

PERMIT CONDITION EU0010-001

10 CSR 10-6.075 Maximum Available Control Technology Regulations and
40 CFR Part 63, Subpart A General Provisions and Subpart AAAA National Emission Standards for
Municipal Solid Waste Landfills and
10 CSR 10-6.070 New Source Performance Regulations and
40 CFR Part 60, Subpart A General Provisions and Subpart WWW Standards of Performance for
Municipal Solid Waste Landfills

The permittee shall comply with the requirements of 40 CFR Part 60, Subpart WWW. [40 CFR §63.1955]

The permittee has installed a collection and control system that captures the gas generated within the landfill, because the emission rate exceeds 50 megagrams per year. The permittee has chosen to install an active gas collection system with an open flare.

Design and Operational Limitations:

- 1) The permittee shall ensure that the active gas collection system
 - a) Is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment. For the purposes of calculating the maximum expected gas generation flow rate from the landfill, one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in 40 CFR §60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.
 - i) For sites with unknown year-to-year solid waste acceptance rate:
$$Q_m = 2 L_o R (e^{-k_c} - e^{-k_t})$$
Where Q_m = maximum expected gas generation flow rate, cubic meters per year
L_o = methane generation potential, cubic meters per megagram solid waste
R = average annual acceptance rate, megagrams per year
k = methane generation rate constant, year⁻¹
t = age of the landfill at equipment installation plus the time the permittee intends to

use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years
 c = time since closure, years (for an active landfill $c = 0$ and $e^{-kc} = 1$)

- ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = 2kL_o M_i (e^{-kti})$$

where Q_M = maximum expected gas generation flow rate, cubic meters per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i th section, megagrams

t_i = age of the i th section, years

- b) Collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:
- 5 years or more if active; or
 - 2 years or more if closed or at final grade.
- c) Collects gas at a sufficient extraction rate;
- d) Is designed to minimize off-site migration of subsurface gas.
- 2) The permittee shall ensure that the open flare is designed and operated in accordance with 40 CFR §60.18 except that for the performance test, the net heating value of the combusted landfill gas as determined in §60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under §60.18(f)(4).
- 3) The permittee shall operate the collection system such that;
- Gas is collected from each area, cell or group of cells in which solid waste has been in place for –
 - Five years or more if active; or
 - Two years or more if closed or at final grade.
 - There is negative pressure at each wellhead except under the following conditions:
 - A fire or increased well temperature. The permittee shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR §60.757(f)(1);
 - Use of a geomembrane or synthetic cover. The permittee shall develop acceptable pressure limits in the design plan;
 - A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;
 - The landfill gas temperature of each interior wellhead is less than 55°C and with either a nitrogen level less than 20 percent or an oxygen level less than five percent. The permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
 - The nitrogen level shall be determined using Method 3C in Appendix A of 40 CFR Part 60, unless an alternative test method is established as allowed by 40 CFR §60.752(b)(2)(i).
 - Unless an alternative test method is established as allowed by 40 CFR §60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A or 3C in Appendix A of 40 CFR Part 60 except that
 - The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

- B) A data recorder is not required;
 - C) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
 - D) A calibration error check is not required;
 - E) The allowable sample bias, zero drift, and calibration drift are ± 10 percent.
- d) The methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.
- e) All collected gases are either piped offsite for use on the adjacent property, used in the Landfill Gas Fired Boiler (EU0020), or vented to the open flare. In the event the active gas collection system is inoperable or the gas can neither be piped offsite nor vented to the flare, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.
- (f) The open flare is in operation at all times when collected gas is routed to it.
- 4) The collection and control system may be capped or removed provided that all the conditions of 40 CFR §60.752 paragraphs (b)(2)(v) (A), (B), and (C) are met.
- 5) The provisions of this permit condition apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for the active gas collection system and shall not exceed 1 hour for both the pipeline to the adjacent property and the open flare. That is, if the active gas collection system is not operating normally for more than 5 days, or if neither the pipeline to the adjacent property nor the open flare are operating normally for more than 1 hour, the provisions of this permit condition do apply.)

Monitoring:

- 1) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 1(c) in the Design and Operational Limitations portion of this permit condition, the permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 3)b) in the Design and Operational Limitations portion of this permit condition. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
- 2) The permittee is not required to expand the system as required in (1) above during the first 180 days after gas collection system startup.
- 3) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 3)c) in the Design and Operational Limitations portion of this permit condition. If a well exceeds one

of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

- 4) For purposes of compliance with 1)b) in the Design and Operational Limits portion of this permit condition, the permittee of a controlled landfill shall place each well or design component as specified in the approved design plan. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:
 - (a) 5 years or more if active; or
 - (b) 2 years or more if closed or at final grade.
- 5) The following procedures shall be used for compliance with the surface methane operational standard as provided in 3)d) in the Design and Operational Limitation portion of this permit condition.
 - a) After installation of the collection system, the permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in (6) below.
 - b) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
 - c) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A of 40 CFR Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
 - d) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in (i) through (v) below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the requirements in 3)d) of the Design and Operational Limitations portion of this permit condition.
 - i) The location of each monitored exceedance shall be marked and the location recorded
 - ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
 - iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in (v) below shall be taken, and no further monitoring of that location is required until the action specified in (v) has been taken.
 - iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in (ii) or (iii) above shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in (iii) or (v) shall be taken.

- v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.
- e) The permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
- 6) The permittee shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices.
 - a) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of Appendix A of 40 CFR Part 60, except that "methane" shall replace all references to VOC.
 - b) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
 - c) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of section 4.4 of Method 21 shall be used.
 - d) The calibration procedures provided in section 4.2 of Method 21 of Appendix A of 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey.
- 7) The permittee shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:
 - a) Measure the gauge pressure in the gas collection header on a monthly basis as provided in (1) above; and
 - b) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in (3) above; and
 - c) Monitor temperature of the landfill gas on a monthly basis as provided in (3) above.
- 8) The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment for monitoring the open flare:
 - a) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.
 - b) A device that records flow to or bypass of the open flare. The permittee shall either:
 - i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
 - ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

Recordkeeping:

- 1) The permittee shall keep records of the design capacity report specified in 2)a) in the Reporting portion of this permit condition, the current amount of solid waste in-place, and the year-by-year waste acceptance rate.
- 2) The permittee shall keep records for the life of the control equipment of the data listed in (a) and (b) below as measured during the initial performance test or compliance determination. The permittee shall keep records of subsequent tests or monitoring for a minimum of 5 years. The permittee shall keep records of the control device vendor specifications until removal.
 - a) To demonstrate that the active gas collection system is in compliance:

- i) The maximum expected gas generation flow rate as calculated in 1)a) in the Design and Operational Limitations portion of this permit condition. The permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.
 - ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR §60.759(a)(1).
- b) To demonstrate that the open flare is in compliance: the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR §60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.
- 3) The permittee shall keep continuous records of the equipment operating parameters specified to be monitored in 1), 3), 5), and 7) in the Monitoring portion of this permit condition, as well as records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.
- 4) The permittee shall keep continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of ear-seals or lock-and-key configurations used to seal bypass lines, specified under 8)b) in the Monitoring portion of this permit condition.
- 5) The permittee shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 8)a) in the Monitoring portion of this permit condition, and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent
- 6) The permittee shall keep for the life of the collection system a plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector, including
 - a) Records of the installation date and location of all newly installed collectors as specified under 4) in the Monitoring portion of this permit condition, and
 - b) Documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40 CFR §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in 40 CFR §60.759(a)(3)(ii).
- 7) The permittee shall keep records of all collection and control system exceedances of the operational standards in 3) in the Design and Operational portion of this permit condition, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.
- 8) All such records shall be up-to-date, readily accessible, on-site, and kept for at least five years. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

Reporting:

- 1) The permittee shall report any deviation from or exceedance of any of the terms imposed by this regulation, or any malfunction which causes a deviation from or exceedance of this regulation to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after such deviation, exceedance, or malfunction.
- 2) The following reports are required, but have already been submitted by the permittee:

- a) An initial design capacity report as specified in 40 CFR §60.752(a), including a map or plot of the landfill and its maximum design capacity, and
- b) An initial collection and control system design plan as specified in 40 CFR §60.752(c).
- c) A closure report as specified in 40 CFR §60.757(d).
- 3) A control equipment removal report is required within 30 days prior to removal or cessation of operation of control equipment as specified in 40 CFR §60.757(e).
- 4) The permittee shall submit annual reports of the recorded information in (a) through (f) below. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR §60.8.
 - a) Value and length of time for exceedance of applicable parameters monitored under 7) and 8) in the Monitoring portion of this permit condition.
 - b) Description and duration of all periods when the gas stream is diverted from the open flare through a bypass line or the indication of bypass flow as specified under 8)b) in the Monitoring portion of this permit condition.
 - c) Description and duration of all periods exceeding 1 hour when neither the pipeline to the adjacent property nor the open flare were operating normally, and the length of these periods.
 - d) All periods when the collection system was not operating in excess of 5 days.
 - e) The location of each exceedance of the 500 parts per million methane concentration as provided in (3)(d) in the Design and Operational Limitations and the concentration recorded at each location for which an exceedance was recorded in the previous month.
 - f) The date of installation and the location of each well or collection system expansion added pursuant to 1), 4), and 5)d) in the Monitoring portion of this permit condition.
- 5) The permittee shall include the following information with the initial performance test report required under 40 CFR §60.8:
 - a) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;
 - b) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;
 - c) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;
 - d) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and
 - e) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
 - f) The provisions for the control of off-site migration.

PERMIT CONDITION EU0010-002

10 CSR 10-6.260, Restriction of Emission of Sulfur Compounds

Emission Limitations:

- 1) The permittee shall not cause nor permit the emission into the atmosphere from the Solid Waste Landfill With Gas Collection System and Open Flare (EU0010) gases containing more than five hundred parts per million by volume (500 ppmv) of sulfur dioxide or more than thirty-five milligrams per cubic meter (35 mg/cubic meter) of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three (3)-hour time period.
- 2) The permittee shall not cause or permit the emission of sulfur compounds from EU0010 which causes or contributes to concentrations exceeding those specified in 10 CSR 10-6.010, *Ambient Air Quality Standards*.

Pollutant	Concentration by Volume *	Remarks
Sulfur Dioxide (SO ₂)	0.03 ppm (80 µg/m ³)	Annual arithmetic mean
	0.14 ppm (365 µg/m ³)	24-hour average not to be exceeded more than once per year
	0.5 ppm (1300 µg/m ³)	3-hour average not to be exceeded more than once per year
Hydrogen Sulfide (H ₂ S)	0.05 ppm (70 µg/m ³)	½-hour average not to be exceeded over 2 times per year
	0.03 ppm (42 µg/m ³)	½-hour average not to be exceeded over 2 times in any 5 consecutive days
Sulfuric Acid (H ₂ SO ₄)	10 µg/m ³	24-hour average not to be exceeded more than once in any 90 consecutive days

* Concentration is given in both parts per million (ppm) and micrograms per cubic meter (µg/m³)

Monitoring/Recordkeeping/Reporting:

The permittee is assumed always to be in compliance with this regulation. Calculations demonstrating this are in Attachment A. The permittee shall keep this attachment with the rest of this permit. No additional monitoring, recordkeeping, or reporting is required for this permit condition.

EU0020 – LANDFILL GAS FIRED BOILER

Emission Unit	Description
EU0020	Landfill gas Fired boiler for heating greenhouse, a Dietrich Model GT408A rated at 1.1 MMBTU/hr, and installed in December 2003 to replace the boiler installed in 1998

PERMIT CONDITION EU0020-001

10 CSR 10-2.040 Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating

Emission Limitation:

The maximum allowable particulate emission rate for the Landfill Gas Fired Boiler (EU0020), which is a new indirect heating source with a heat input rate of less than ten (10) million BTUs per hour, shall be 0.40 pounds per million BTUs of heat input.

Monitoring/Recordkeeping/Reporting:

The permittee is assumed always to be in compliance with this regulation. Calculations demonstrating this are in Attachment B. The permittee shall keep this attachment with the rest of this permit. No additional monitoring, recordkeeping, or reporting is required for this permit condition.

PERMIT CONDITION EU0020-002

10 CSR 10-6.220 Restriction of Emission of Sulfur Compounds

Emission Limitations:

- 1) The permittee shall not cause nor permit the emission into the atmosphere from the Landfill Gas Fired Boiler (EU0020) gases containing more than five hundred parts per million by volume (500 ppmv) of sulfur dioxide or more than thirty-five milligrams per cubic meter (35 mg/cubic meter) of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three (3)-hour time period.
- 2) The permittee shall not cause or permit the emission of sulfur compounds from EU0020 which causes or contributes to concentrations exceeding those specified in 10 CSR 10-6.010, *Ambient Air Quality Standards*.

Pollutant	Concentration by Volume *	Remarks
Sulfur Dioxide (SO ₂)	0.03 ppm (80 µg/m ³)	Annual arithmetic mean
	0.14 ppm (365 µg/m ³)	24-hour average not to be exceeded more than once per year
	0.5 ppm (1300 µg/m ³)	3-hour average not to be exceeded more than once per year
Hydrogen Sulfide (H ₂ S)	0.05 ppm (70 µg/m ³)	1/2-hour average not to be exceeded over 2 times per year
	0.03 ppm (42 µg/m ³)	1/2-hour average not to be exceeded over 2 times in any 5 consecutive days
Sulfuric Acid (H ₂ SO ₄)	10 µg/m ³	24-hour average not to be exceeded more than once in any 90 consecutive days

* Concentration by Volume is given in both parts per million (ppm) and micrograms per cubic meter (µg/m³)

Monitoring/Recordkeeping/Reporting:

The permittee is assumed always to be in compliance with this regulation. Calculations demonstrating this are in Attachment C. The permittee shall keep this attachment with the rest of this permit. No additional monitoring, recordkeeping, or reporting is required for this permit condition.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.050 and 40 CFR 63.6(e), Start-up, Shutdown and Malfunction Conditions

Regulation 10 CSR 10-6.050 applies to the Landfill Gas Fired Boiler (EU0020). Regulation 40 CFR 63.6(e) applies to the Rumble I and II Solid Waste Landfill With Gas Collection System and Open Flare (EU0010).

10 CSR 10-6.050 (Applies to EU0020).

- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
 - a) Name and location of installation;
 - b) Name and telephone number of person responsible for the installation;
 - c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
 - d) Identity of the equipment causing the excess emissions;
 - e) Time and duration of the period of excess emissions;
 - f) Cause of the excess emissions;
 - g) Air pollutants involved;
 - h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
 - i) Measures taken to mitigate the extent and duration of the excess emissions; and
 - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
- 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.
- 4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.

- 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

40 CFR 63.6(e) (Applies to EU0010)

1) Operation and maintenance requirements

- a) At all times, including periods of startup, shutdown, and malfunction, the permittee must operate and maintain the Solid Waste Landfill With Gas Collection System and Open Flare (EU0010) in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the permittee reduce emissions from EU0010 to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the permittee to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the permittee to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph 2 of this section), review of operation and maintenance records, and inspection of EU0010.
- b) Malfunctions must be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in paragraph 2) below. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, the permittee must comply by minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices.
- c) Operation and maintenance requirements established pursuant to section 112 of the Clean Air Act are enforceable independent of emissions limitations or other requirements in relevant standards.

2) Startup, shutdown, and malfunction plan.

- a) The permittee must develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining EU0010 during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard. This plan must be developed by the permittee as soon as practicable, but not later than one year after the date of issuance of this permit. The purpose of the startup, shutdown, and malfunction plan is to—
 - i) Ensure that, at all times, the permittee operates and maintains EU0010 in a manner which satisfies the general duty to minimize emissions established by paragraph 1)a) above;
 - ii) Ensure that the permittee is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and
 - iii) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).
- b) During periods of startup, shutdown, and malfunction, the permittee must operate and maintain EU0010 in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under paragraph 2)a) above.
- c) When actions taken by the permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in EU0010's

startup, shutdown, and malfunction plan, the permittee must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for that event. In addition, the permittee must keep records of these events as specified in §63.10(b), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the permittee shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with EU0010's startup, shutdown and malfunction plan in the semiannual startup, shutdown, and malfunction report required in §63.10(d)(5).

- d) If an action taken by the permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in EU0010's startup, shutdown, and malfunction plan, and EU0010 exceeds any applicable emission limitation in the relevant emission standard, then the permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with §63.10(d)(5).
- e) The permittee must maintain at EU0010 a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the Director. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in paragraph 2)h) below, the permittee must maintain at EU0010 each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the Director for a period of 5 years after revision of the plan. If at any time after adoption of a startup, shutdown, and malfunction plan EU0010 ceases operation or is otherwise no longer subject to the provisions of this part, the permittee must retain a copy of the most recent plan for 5 years from the date EU0010 ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the Director. The Director may at any time request in writing that the permittee submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at EU0010 or in the possession of the permittee. Upon receipt of such a request, the permittee must promptly submit a copy of the requested plan (or portion thereof) to the Director. The Director must request that the permittee submit a particular startup, shutdown, or malfunction plan (or a portion thereof) whenever a member of the public submits a specific and reasonable request to examine or to receive a copy of that plan or portion of a plan. The permittee may elect to submit the required copy of any startup, shutdown, and malfunction plan to the Director in an electronic format. If the permittee claims that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to protection from disclosure under section 114(c) of the Clean Air Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.
- f) To satisfy the requirements of this paragraph 2) to develop a startup, shutdown, and malfunction plan, the permittee may use the installation's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this paragraph 2) and are made available for inspection or submitted when requested by the Director.
- g) Based on the results of a determination made under paragraph 1)a) above, the Director may require that the permittee make changes to the startup, shutdown, and malfunction plan for

EU0010. The Director must require appropriate revisions to a startup, shutdown, and malfunction plan, if the Director finds that the plan:

- i) Does not address a startup, shutdown, or malfunction event that has occurred;
 - ii) Fails to provide for the operation of EU0010 during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions established by paragraph 1)a) above;
 - iii) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable; or
 - iv) Includes an event that does not meet the definition of startup, shutdown, or malfunction listed in §63.2.
- h) The permittee may periodically revise the startup, shutdown, and malfunction plan for EU0010 as necessary to satisfy the requirements of this part or to reflect changes in equipment or procedures at EU0010. Unless the permitting authority provides otherwise, the permittee may make such revisions to the startup, shutdown, and malfunction plan without prior approval by the Administrator or the permitting authority. However, each such revision to a startup, shutdown, and malfunction plan must be reported in the semiannual report required by §63.10(d)(5). If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the permittee developed the plan, the permittee must revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining EU0010 during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. In the event that the permittee makes any revision to the startup, shutdown, and malfunction plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the permittee has provided a written notice describing the revision to the Director.
- i) Any revisions made to the startup, shutdown, and malfunction plan in accordance with the procedures established by this part shall not be deemed to constitute permit revisions. Moreover, the permit shield shall not apply to the procedures specified by the startup, shutdown, and malfunction plan for EU0010.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(6)(B)1.A(V)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065(6)(C)3.B]

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

- 1) The permittee shall complete and submit an Emission Inventory Questionnaire (EIQ) in accordance with the requirements outlined in this rule.
- 2) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079 to satisfy the requirements of the Federal Clean Air Act, Title V.
- 3) The fees shall be due April 1 each year for emissions produced during the previous calendar year. The fees shall be payable to the Department of Natural Resources and shall be accompanied by the Emissions Inventory Questionnaire (EIQ) form or equivalent approved by the director.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.170 Restriction of Emission of Particulate Matter to the Ambient Air Beyond the Premises of Origin

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
 - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
 - b) Paving or frequent cleaning of roads, driveways and parking lots;
 - c) Application of dust-free surfaces;
 - d) Application of water; and
 - e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

- 1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good

professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.

- 2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-2.100 Open Burning Restrictions

- 1) The permittee shall not conduct, cause, permit or allow a salvage operation, the disposal of trade wastes or burning of refuse by open burning.
- 2) Exception - Open burning of trade waste or vegetation may be permitted only when it can be shown that open burning is the only feasible method of disposal or an emergency exists which requires open burning.
- 3) Any person intending to engage in open burning shall file a request to do so with the director. The request shall include the following:
 - a) The name, address and telephone number of the person submitting the application; The type of business or activity involved; A description of the proposed equipment and operating practices, the type, quantity and composition of trade wastes and expected composition and amount of air contaminants to be released to the atmosphere where known;
 - b) The schedule of burning operations;
 - c) The exact location where open burning will be used to dispose of the trade wastes;
 - d) Reasons why no method other than open burning is feasible; and
 - e) Evidence that the proposed open burning has been approved by the fire control authority which has jurisdiction.
- 4) Upon approval of the open burning permit application by the director, the person may proceed with the operation under the terms of the open burning permit. Be aware that such approval shall not exempt Rumble I and II Recycling and Disposal Facility from the provisions of any other law, ordinance or regulation.
- 5) The permittee shall maintain files with letters from the director approving the open burning operation and previous DNR inspection reports.

10 CSR 10-2.070 Restriction of Emission of Odors

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

This requirement is not federally enforceable.

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

- 1) The permittee shall follow the procedures and requirements of 40 CFR Part 61 Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61 Subpart M, *National Emission Standard for Asbestos*, including 40 CFR Part 61.154(c)(1) and 40 CFR Part 61.154(e).
- 2) Either there must be no visible emissions from the waste disposal site or the permittee must follow one of the requirements specified in 40 CFR 61.151(a)(2), 40 CFR 61.151(a)(3), 40 CFR 61.151(4),

or 40 CFR 61.151(c). If the permittee does not opt to follow the requirements specified in 40 CFR 61.151(a)(2) or (3), then the permittee must install fencing and warning signs as specified in 40 CFR 61.151(b), unless a natural barrier adequately deters access by the general public.

- 3) Notify the Director in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Director at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
 - a) Scheduled starting and completion dates.
 - b) Reason for disturbing the waste.
 - c) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Director may require changes in the emission control procedures to be used.
 - d) Location of any temporary storage site and the final disposal site.
- 4) Comply, if this has not already been done, with the provisions of 40 CFR 61.151 and 40 CFR 61.154 regarding closure of a waste disposal site, such as 40 CFR 61.151(e) and 40 CFR 61.154(h).

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR 82, Subpart E:
 - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
 - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
 - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
 - d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
 - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
 - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
 - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
 - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR 82, Subpart A, *Production and Consumption Controls*.
- 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR 82, Subpart G, *Significant New Alternatives Policy Program. Federal Only - 40 CFR 82*

10 CSR 10-6.280 Compliance Monitoring Usage

- 1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
 - a) Monitoring methods outlined in 40 CFR 64;
 - b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, *Operating Permits*, and incorporated into an operating permit; and
 - c) Any other monitoring methods approved by the director.
- 2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
 - a) Monitoring methods outlined in 40 CFR 64;
 - b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, *Operating Permits*, and incorporated into an operating permit; and
 - c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
- 3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
 - a) Applicable monitoring or testing methods, cited in:
 - i) 10 CSR 10-6.030, *Sampling Methods for Air Pollution Sources*;
 - ii) 10 CSR 10-6.040, *Reference Methods*;
 - iii) 10 CSR 10-6.070, *New Source Performance Standards*;
 - iv) 10 CSR 10-6.080, *Emission Standards for Hazardous Air Pollutants*; or
 - b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued,

10 CSR 10-6.065(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065(6)(C)1.C General Recordkeeping and Reporting Requirements

- 1) Recordkeeping
 - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
 - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
 - a) All reports shall be submitted to the Air Pollution Control Program, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
 - b) The permittee shall submit a report of all required monitoring by:
 - i) October 1st for monitoring which covers the January through June time period, and
 - ii) April 1st for monitoring which covers the July through December time period.
 - iii) Exception. Monitoring requirements which require reporting more frequently than semi annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
 - c) Each report shall identify any deviations from emission limitations, monitoring, recordkeeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
 - d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
 - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7.A of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
 - ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.

- iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's semiannual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.
- e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
- f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR 68, *Accidental Release Prevention Requirements*. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR §68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR 68 no later than the latest of the following dates:

- 1) June 21, 1999;
- 2) Three years after the date on which a regulated substance is first listed under 40 CFR §68.130; or
- 3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(6)(C)1.F Severability Clause

In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

10 CSR 10-6.065(6)(C)1.G General Requirements

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 10 CSR 10-6.065(6)(C)1.

10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions

No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.

10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios

There are two operating scenarios. Operating Scenario 1 is when the landfill gas is being flared. Operating Scenario 2 is when the landfill gas is being piped to an adjacent property for use by a cement manufacturing process. Under either scenario, a small amount of the gas may or may not be drawn off to fuel a boiler to heat a greenhouse.

10 CSR 10-6.065(6)(C)3 Compliance Requirements

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
 - a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
 - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
 - a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
 - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, as well as the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. The compliance certification shall include the following:
 - a) The identification of each term or condition of the permit that is the basis of the certification;
 - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
 - c) Whether compliance was continuous or intermittent;

- d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
- e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065(6)(C)6 Permit Shield

- 1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:
 - a) The application requirements are included and specifically identified in this permit, or
 - b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
- 2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
 - a) The provisions of section 303 of the Act or section 643.090, RSMo concerning emergency orders,
 - b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
 - c) The applicable requirements of the acid rain program,
 - d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
 - e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

10 CSR 10-6.065(6)(C)7 Emergency Provisions

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
 - a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
 - b) That the installation was being operated properly,
 - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
 - d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(6)(C)8 Operational Flexibility

An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable under the permit, and the changes do not result in the emission of any air contaminant not previously

emitted. The permittee shall notify the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, at least seven days in advance of these changes, except as allowed for emergency or upset conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

- 1) Section 502(b)(10) changes. Changes that, under section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), recordkeeping, reporting or compliance requirements of the permit.
 - a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the APCP shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the APCP as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the APCP as soon as possible after learning of the need to make the change.
 - b) The permit shield shall not apply to these changes.

10 CSR 10-6.065(6)(C)9 Off-Permit Changes

- 1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the application, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this paragraph 1). Off-permit changes shall be subject to the following requirements and restrictions:
 - a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is subject to any requirements under Title IV of the Act or is a Title I modification;
 - b) The permittee must provide written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, no later than the next annual emissions report. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.
 - c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes; and
 - d) The permit shield shall not apply to these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Brian Allen, Project Manager. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065(6)(E)6 Reopening-Permit for Cause

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR §70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
- 2) MDNR or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
- 3) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
 - a) The permit has a remaining term of less than three years;
 - b) The effective date of the requirement is later than the date on which the permit is due to expire; or
 - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit; or
- 5) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the draft permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

ATTACHMENT A

Calculations Demonstrating Compliance with Permit Condition EU0010-002, Page 1 of 2

The following calculations demonstrate that the Solid Waste Landfill With Gas Collection System and Open Flare (EU0010) is always in compliance with 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*.

For most of the year, the gas collected from the landfill is piped to an adjacent property for use in a cement manufacturing process. The gas, with the sulfur in it, is not emitted from this installation when it is being piped offsite. For about three weeks each year, the cement manufacturing process is down for maintenance. During that time, the landfill gas (LFG) is flared and some sulfur is emitted.

Both sulfur dioxide (SO₂) and sulfur trioxide (SO₃) can be created in landfills. Sulfur trioxide is very reactive with the moisture in the landfill (H₂O) and forms sulfuric acid, (H₂SO₄). Sulfuric acid is heavier than water and tends to settle in the landfill rather than rise. Thus, it can be assumed that the entire sulfur oxide gas emission from this landfill is in the form of sulfur dioxide.

Compliance With 10 CSR 10-6.260(3)(A)2

The permit application for this installation gave the maximum sulfur content of the LFG as 46.9 ppmv. This is the concentration of sulfur in the input LFG. The flare also requires air, which can be assumed to be sulfur-free, to combust the methane in the LFG, so the exhaust gas flow consists of both the LFG through the flare and the air through it.

Chapter 2.4 of U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition, states "When gas generation reaches steady state conditions, LFG consists of approximately 40 percent by volume CO₂, 55 percent CH₄, 5 percent N₂ (and other gases), and trace amounts of NMOCs." This landfill was closed in 1998 and has had time to reach steady state. Assume that the LFG from this installation contains 55% methane.

The balanced chemical reaction for methane combustion is $\text{CH}_4 + 2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{CO}_2$. This is a gas reaction, so the volume ratio of oxygen to methane is 2 to 1. For every volume of oxygen in air, there are 3.78 volumes of nitrogen. This gives a stoichiometric air/fuel ratio of $2 + 2 \times 3.78$, or 9.56.

$$\text{Air through flare} = \left(\frac{0.55 \text{ volume CH}_4}{1 \text{ volume LFG}} \right) \left(\frac{9.56 \text{ volumes Air}}{1 \text{ volume CH}_4} \right) = 5.3 \text{ volumes Air/ volume LFG}$$

The total gas flow through the flare is 5.3 volumes of air for each volume of LFG, or 6.3 volumes. The exit gas flow from the flare has an SO₂ concentration of $\left(\frac{46.9 \text{ ppmv SO}_2}{\text{volume LFG}} \right) \left(\frac{\text{volume LFG}}{6.3 \text{ volumes Total Gas}} \right) = 7.4$ ppmv SO₂ for any total gas volume.

ATTACHMENT A

Calculations Demonstrating Compliance with Permit Condition EU0010-002, Page 2 of 2

7.4 ppmv SO₂ is much less than the 500 ppmv SO₂ limitation for new sources specified in 10 CSR 10-6.260(3)(A)2. Therefore EU0010 is in compliance with this part of the regulation.

Compliance With 10 CSR 10-6.260(3)(B)

10 CSR 10-6.260(3)(B) and 10 CSR 10-6.010 limit sulfur dioxide output to the NAAQS limits.

0.03 ppm on an annual average	}	Since these are for gases, units are actually ppmv.
0.14 ppm on a 24-hour average		This can be proved by converting them to their
0.5 ppm on a 3-hour average		equivalents in µg SO ₂ /m ³ air, which are also specified
		in the regulation

By the time the gas reaches the property line of the ninety-acre landfills, it will easily be diluted by a factor of a thousand, making it 0.0074 ppmv. Since the landfill gas flow and the concentration of sulfur dioxide in it are steady, this figure works for any of the time periods specified above. A concentration of 0.0074 ppmv is under all three of these limitations. Therefore EU0010 is also in compliance with this part of the regulation.

Draft

ATTACHMENT B

Calculations Demonstrating Compliance with Permit Condition EU0020-001

The following calculations demonstrate that the Landfill Gas Fired Boiler (EU0020) is always in compliance with 10 CSR 10-2.040, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*.

This boiler is the only existing indirect heating source in the installation. The permit application for this installation gave its heat input rate as 1.1 MMBtu/hr. Per 10 CSR 10-2.040(2)(B), its maximum allowable emission rate for particulate matter is 0.40 lb/MMBtu.

$$\text{Maximum allowable PM emission rate} = \left(\frac{1.1 \text{ MMBtu}}{\text{hr}} \right) \left(\frac{0.40 \text{ lb PM}}{\text{MMBtu}} \right) = 0.44 \text{ lb PM/hr}$$

The 2005 EIQ for this installation gave the Maximum Hourly Design Rate (MHDR) of this boiler as 0.0024 mmcf of landfill gas (LFG). The LFG is 55% methane. (See Attachment A.) The boiler's MHDR is thus $(0.0024 \text{ mmcf LFG}) \left(\frac{0.55 \text{ methane}}{1 \text{ LFG}} \right) = 0.0013 \text{ mmcf methane}$

Table 2.4-5 of U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition gives an emission factor of 8.2 lb particulate matter (PM) per 10^6 dscf methane

$$\text{Potential PM emission} = \left(\frac{0.0013 \times 10^6 \text{ ft}^3 \text{ Methane}}{\text{hr}} \right) \left(\frac{8.2 \text{ lb PM}}{10^6 \text{ ft}^3 \text{ Methane}} \right) = 0.011 \text{ lb PM/hr}$$

Since the potential emission rate of particulate matter from this boiler is less than 3% of the allowable emission rate, EU0020 can be assumed always to be in compliance with 10 CSR 10-2.040.

ATTACHMENT C

Calculations Demonstrating Compliance with Permit Condition EU0020-002, Page 1 of 2

The following calculations demonstrate that the Landfill Gas Fired Boiler (EU0020) is always in compliance with 10 CSR 10-2.260, *Restriction of Emission of Sulfur Compounds*.

Both sulfur dioxide (SO₂) and sulfur trioxide (SO₃) can be created in landfills. Sulfur trioxide is very reactive with the moisture in the landfill (H₂O) and forms sulfuric acid, (H₂SO₄). Sulfuric acid is heavier than water and tends to settle in the landfill rather than rise. Thus, it can be assumed that the entire sulfur oxide gas emission from this landfill is in the form of sulfur dioxide.

Compliance With 10 CSR 10-6.260(3)(C)2

The permit application for this installation gave the heat input rate of the boiler as 1.1 MMBtu/hr. Per 10 CSR 10-6.260(3)(C)2, its maximum allowable emission rate for sulfur dioxide is 8 lb/MMBtu.

$$\text{Maximum allowable SO}_2 \text{ emission rate} = \left(\frac{1.1 \text{ MMBtu}}{\text{hr}} \right) \left(\frac{8 \text{ lb SO}_2}{\text{MMBtu}} \right) = 8.8 \text{ lb SO}_2/\text{hr}$$

The 2005 EIQ for this installation gave the Maximum Hourly Design Rate (MHDR) of this boiler as 0.0024 mmcf of landfill gas (LFG). The permit application for this installation gave the maximum sulfur content of the LFG as 46.9 ppmv.

$$\text{Potential SO}_2 \text{ emission rate} = \left(\frac{0.0024 \times 10^6 \text{ ft}^3 \text{ LFG}}{\text{hr}} \right) \left(\frac{46.9 \text{ ft}^3 \text{ SO}_2}{10^6 \text{ ft}^3 \text{ LFG}} \right) = 0.11 \text{ ft}^3 \text{ SO}_2/\text{hr}$$

The molecular weight of SO₂ is MW = 32 g/mol + (2*16 g/mol) = 64 g/mol. Converting the sulfur dioxide from ft³/hr to lb/hr gives:

$$\text{Potential SO}_2 \text{ emission rate} = \left(\frac{0.11 \text{ ft}^3 \text{ SO}_2}{\text{hr}} \right) \left(\frac{0.3048 \text{ m}}{\text{ft}} \right)^3 \left(\frac{1000 \text{ L}}{\text{m}^3} \right) \left(\frac{\text{mol Gas}}{22.4 \text{ L Gas}} \right) \left(\frac{64 \text{ g SO}_2}{\text{mol SO}_2} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) = 0.020 \text{ lb SO}_2/\text{hr}$$

Since 0.020 lb SO₂/hr is much less than 8.8 lb SO₂/hr, EU0020 is in compliance with this part of the regulation.

Compliance With 10 CSR 10-6.260(3)(B)

10 CSR 10-6.260(3)(B) and 10 CSR 10-6.010 limit sulfur dioxide output to the NAAQS limits.

0.03 ppm on an annual average	} Since these are for gases, they are actually in ppmv. This can be proved by converting them to their equivalents in µg SO ₂ /m ³ air, which are also specified in the regulation
0.14 ppm on a 24-hour average	
0.5 ppm on a 3-hour average	

ATTACHMENT C

Calculations Demonstrating Compliance with Permit Condition EU0020-002, Page 2 of 2

The permit application for this installation gave the maximum sulfur content of the LFG as 46.9 ppmv. Note that this part per million volume figure is on the basis of the input LFG. The boiler also requires air to combust the methane in the LFG, and the exhaust gas flow consists of both the LFG through the boiler and the air through it.

Chapter 2.4 of U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition, states "When gas generation reaches steady state conditions, LFG consists of approximately 40 percent by volume CO₂, 55 percent CH₄, 5 percent N₂ (and other gases), and trace amounts of NMOCs." This landfill was closed in 1998 and has had time to reach steady state. Assume that the LFG from this installation contains 55% methane.

The balanced chemical reaction for methane combustion is $\text{CH}_4 + 2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{CO}_2$. This is a gas reaction, so the volume ratio of oxygen to methane is 2 to 1. For every volume of oxygen in air, there are 3.78 volumes of nitrogen. This gives a stoichiometric air/fuel ratio of $2 + 2 \times 3.78$, or 9.56.

$$\text{Air through boiler} = \left(\frac{0.55 \text{ volume CH}_4}{1 \text{ volume LFG}} \right) \left(\frac{9.56 \text{ volumes Air}}{1 \text{ volume CH}_4} \right) = 5.3 \text{ volumes Air/ volume LFG}$$

The total gas flow through the boiler is 5.3 volumes of air for each volume of LFG, or 6.3 volumes. The exit gas flow from the boiler has an SO₂ concentration of $\left(\frac{46.9 \text{ ppmv SO}_2}{\text{volume LFG}} \right) \left(\frac{\text{volume LFG}}{6.3 \text{ volumes Total Gas}} \right) = 7.4$ ppmv SO₂ for any total gas volume.

By the time the gas reaches the property line of the ninety-acre landfills, it will easily be diluted by a factor of a thousand, making it 0.0074 ppmv. Since the landfill gas flow and the concentration of sulfur dioxide in it are steady, this figure works for any of the time periods specified in the regulation. Therefore EU0020 is also in compliance with this part of the regulation.

STATEMENT OF BASIS

Permit Reference Documents

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Part 70 Operating Permit Application, received August 8, 2006;
- 2) 2005 Emissions Inventory Questionnaire, received March 28, 2006; and
- 3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits

In the operating permit application, the installation indicated that it was not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

- 1) 10 CSR 10-2.040, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*, applies to the Landfill Gas Fueled Boiler. However, this boiler is assumed always to be in compliance. The calculations in Attachment B demonstrate the validity of this assumption.
- 2) CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*, applies to the Solid Waste Landfill with Gas Collection System with Enclosed Flare (EU0010). This emission unit is not exempt per paragraph 10 CSR 10-2.60(1)(A), because even though it is regulated under 10 CSR 10 6.070, it is not subject to an applicable sulfur compound emission limit under that regulation. That being said, this emission unit is assumed always to be in compliance. The calculations in Attachment A demonstrate the validity of this assumption.
- 3) 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*, also applies to the Landfill Gas Fueled Boiler (EU0020). This emission unit is also assumed always to be in compliance. The calculations in Attachment C demonstrate the validity of this assumption.

Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

- 1) 10 CSR 10-2.150, *Time Schedule for Compliance*, was a plant-wide permit condition in this installation's original operating permit. However, the requirements of this regulation have been fulfilled and are no longer relevant, so it is not included in this operating permit.
- 2) 10 CSR 10-6.100, *Alternate Emission Limits*, does not apply to this installation, because it is in an attainment area for ozone.
- 3) 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*, does not apply. Per 10 CSR 10-6.220(1)(H), this installation is exempt because it is regulated under 10 CSR 10-6.070, *New Source Performance Standards* and 40 CFR Part 60 Subpart WWW.
- 4) 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*, does not apply. Per the "Purpose" paragraph of this regulation, this installation is exempt because it is regulated under 10 CSR 10-6.070, *New Source Performance Standards*.

Construction Permit Revisions

This permit makes no revisions to construction permits for this installation:

New Source Performance Standards (NSPS) Applicability

The following New Source Performance Standards (NSPS) apply to this installation:

- 1) 40 CFR 60 Subpart A, *General Provisions*
- 2) 40 CFR 60 Subpart WWW, *Standards of Performance for Municipal Solid Waste Landfills*

The following NSPS regulations do not apply to this installation for the reasons given.

- 1) 40 CFR 60 Subparts C and Cc, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills* do not apply to this installation because it was modified after May 30th, 1991.
- 2) 40 CFR 60 Subparts K, Ka, and Kb, *Standards of Performance for Storage Vessels*, do not apply to the 15,000-gallon Highland leachate storage tank because it is too small.

No other NSPS regulations apply to this installation.

Maximum Available Control Technology (MACT) Applicability

The following Maximum Achievable Control Technology (MACT) regulations apply to this installation:

- 1) 40 CFR 63 Subpart, *General Provisions*
- 2) 40 CFR 63 Subpart AAAA, *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills*

No other MACT regulations apply to this installation.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

The following National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation applies to this installation:

- 1) 40 CFR 61 Subpart M, *National Emission Standard for Asbestos*

The following National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation does not apply to this installation:

- 1) In the permit application and according to APCP records, there was no indication that 10 CSR 10-6.250, *Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements*, applies to this installation. The installation is subject to this regulation if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

No other NESHAP regulations apply to this installation.

Compliance Assurance Monitoring (CAM) Applicability

The CAM rule (40 CFR 64, *Compliance Assurance Monitoring*) applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and

- Uses a control device to achieve compliance, and
 - Has pre-control emissions that exceed or are equivalent to the major source threshold.
- 40 CFR 64 is not applicable to this installation because none of the pollutant-specific emission units uses a control device to achieve compliance with a relevant standard.

Other Regulatory Determinations

Since the Landfill Gas Fired Boiler (EU0020) only operates in winter, and is too small to utilize all the gas from the landfill, it is not a control device. Normally, most or all of the landfill gas is piped to an adjacent property for use in a cement manufacturing process. If this is not possible, such as during the three weeks a year when that process is down for maintenance, the gas must be vented to an open flare. The flare is the control device.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:

- 1) The specific pollutant regulated by that rule is not emitted by the installation;
- 2) The installation is not in the source category regulated by that rule;
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule;
- 4) The installation does not contain the type of emission unit which is regulated by that rule;
- 5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the APCP's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation that was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

Prepared by:

Cheryl Steffan
Environmental Engineer

CERTIFIED MAIL,
RETURN RECEIPT REQUESTED

Mr. Brian Allen, Project Manager
Rumble I and II Recycling and Disposal Facility
720 E. Butterfield Road
Lombard, IL 60148

Re: Rumble I and II Recycling and Disposal Facility, 095-0273
Permit Number:

Dear Mr. Allen:

Enclosed with this letter is your Part 70 operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important you read and understand the requirements contained in your permit.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program at (573) 751-4817, or write the Department of Natural Resources, Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102. Thank you for your time and attention.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS: csk

Enclosures

c: Ms. Tamara Freeman, US EPA Region VII
Mr. Richard Vani, Kansas City Regional Office
PAMS File: 2006-08-029

CERTIFIED MAIL, 70052570000215847072
RETURN RECEIPT REQUESTED

Mr. Brian Allen
Project Manager
Rumble I and II Recycling and Disposal Facility
720 E. Butterfield Road
Lombard, IL 60148

Re: Draft Part 70 Operating Permit – Project (PAMS) No: 2006-08-029

Dear Mr. Allen

The Air Pollution Control Program completed the preliminary review of your Part 70 (Title V) permit application. A public notice will be placed in the Kansas City Star on Sunday, January 28, 2007.

The Air Pollution Control Program will accept comments regarding the draft permit postmarked on or before the closing date. It is very important you read and understand this legal document. You will be held responsible for complying with this document.

Please address comments or recommendations for changes to my attention at:

Operating Permits Unit
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102

A copy of this draft has also been sent to the U.S. EPA's Region VII office in Kansas City for their review. The Region VII office is afforded, by law, oversight

Mr. Brian Allen
Page Two

authority on any Title V permit which Missouri (or any of the other states in the region) may propose to issue. A public hearing may be held if interest is expressed by the public.

Should you have any questions, or wish clarification on any items in this draft permit, please contact me at (573) 751-4817, or write the Department of Natural Resources' Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102. Thank you for your time and attention.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Cheryl Steffan
Environmental Engineer

CAS/kdm

Enclosures

c: Ms. Tamara Freeman, US EPA Region VII
Mr. Richard Vani, Kansas City Regional Office
PAMS File: 2006-08-029

Mr. Jan Sides, Director
Kansas Bureau of Air & Radiation
Forbes Field, Building 283
Topeka, KS 66620

RE: Affected States Review – Notification of Proposed Final Part 70 Operating Permit

Dear Mr. Sides:

In accordance with Missouri State Rule 10 CSR 10-6.065(6)(F)2. and the Clean Air Act this letter is to notify you of public notice of the preliminary draft and request for comments for:

Rumble I and II Recycling and Disposal Facility located in Sugar Creek, MO 64054

Project Number – 2006-08-029

Public notice will be published in the Kansas City Star on Sunday, January 28, 2007.

You are invited to submit any relevant information, materials, and views in support of or in opposition to the draft operating permits in writing by no later than February 27, 2007 to my attention at Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Should you require further information or documentation on this matter, please contact the Operating Permits Unit at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102. Thank you for your time and attention.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS: csk

c: Ms. Tamara Freeman, US EPA Region VII
Mr. Richard Vani, Kansas City Regional Office
PAMS File: 2006-08-029

For Publication on Sunday, January 28, 2007

Notice of documents available for public viewing
Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program

A draft-operating permit has been issued for the following air pollution sources:

Installation	City	Project #
Rumble I and II Recycling and Disposal Facility	Sugar Creek	2006-08-029

Activities included in these permits are all activities involved in the operation of these sources with the potential for producing regulated quantities of regulated air pollutants.

Copies of the draft permits are available for public comment. Public files containing copies of all non-confidential materials and a copy or summary of other materials, if any, considered in this draft permit, are available for public viewing at the following locations: MO Dept. of Natural Resources, Kansas City Regional Office, 500 NE Colbern Road, Lee's Summit, MO 64086-4710 or by written request from the Air Pollution Control Program, Operating Permits Unit, P.O. Box 176, Jefferson City, MO 65102 (Information deemed confidential business information pursuant to Missouri State Rule 10 CSR 10-6.210, *Confidential Information*, if any exists, is not included in the public files. Emission data, as defined by this rule, cannot be considered confidential business information.)

The file is available for viewing through February 27, 2007. Citizens are invited to submit any relevant information, materials, and views in support of or in opposition to the draft operating permits in writing no later than February 27, 2007. Written comments and/or requests for public hearing should be sent to Mr. Jim Kavanaugh, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

The Air Pollution Control Program will hold an informal public hearing after an additional 30 day comment period on the draft permit if: 1.) A timely request is made for such a hearing during the public comment period; and 2.) The person requesting the hearing identifies material issues concerning the preliminary determination and the Air Pollution Control Program determines that a public hearing will be useful in resolving those issues.

This public notice is made pursuant to Missouri State Rule 10 CSR 10-6.065, Operating Permits.

Kansas City Star
1729 Grand Avenue
Kansas City, MO 64108

Attention: Legal Ads

To Whom It May Concern:

We wish to place the attached legal advertisement in your newspaper to be run ONCE. It must run on Sunday, January 28, 2007.

We require a certified affidavit of publication be received in our office by February 9, 2007. Please submit the affidavit and invoice for payment to:

Attention: Cheri Bechtel
Department of Natural Resources
Air Pollution Control Program
P. O. Box 176
Jefferson City, MO 65102

If you have any questions, please contact me at (573) 751-4817. Thank you for your assistance.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permits Unit Chief

MJS/csk

c: Cheri Bechtel, Procurement Clerk
PAMS File: 2006-08-029

MISSOURI DEPARTMENT OF NATURAL RESOURCES FOLDER TRANSMITTAL ROUTING SHEET		Document #: Division Log #: Program Log #:
DEADLINE: Date Penalty for Missing Deadline: None		
Rumble I and II Recycling and Disposal Facility		2006-08-029
Originator: Cheryl Steffan	Telephone: (573) 751-4817	Date:
Typist: Karla Marshall	File Name: P:/APCP/Permits/Users/Mike Stansfield/Permits under Executive Review/2006-08-029 Rumble I and II Recycling and Disposal Facility.doc	
FOR SIGNATURE APPROVAL OF:		
<input type="checkbox"/> DNR Director <input type="checkbox"/> DNR Deputy Director <input type="checkbox"/> Division Director <input type="checkbox"/> Division Deputy Director X Other: James L, Kavanaugh		
PROGRAM APPROVAL: Approved by: _____ Program: <u>APCP</u> Date: _____		
Other Program Approval (Section/Unit): _____ Date: _____		
Comments:		
ROUTE TO:		
<input type="checkbox"/> DIVISION DIRECTOR APPROVAL: _____		Date: _____
Comments:		
<input type="checkbox"/> FINANCIAL REVIEW – DIVISION OF ADMINISTRATIVE SUPPORT:		
DAS Director: _____		Date: _____
<input type="checkbox"/> Fee Worksheet Received By: _____		Date: _____
Accounting: _____		Date: _____
Budget: _____		Date: _____
General Services: _____		Date: _____
Internal Audit: _____		Date: _____
Purchasing: _____		Date: _____
Comments:		
<input type="checkbox"/> LEGAL REVIEW:		
<input type="checkbox"/> General Counsel: _____		Date: _____
<input type="checkbox"/> AGO: _____		Date: _____
Comments:		
<input type="checkbox"/> DEPARTMENT DIRECTOR APPROVAL: _____		Date: _____
Comments:		
<input type="checkbox"/> NOTARIZATION NEEDED		
		INITIALS/DATE